

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Enterprise Wireless Alliance and Pacific)	RM-11738
DataVision, Inc. Petition for Rulemaking)	
Regarding Realignment of 900 MHz)	
Spectrum)	
)	

COMMENTS OF M2M SPECTRUM NETWORKS, LLC

I. INTRODUCTION AND SUMMARY

M2M Spectrum Networks, LLC, (“M2M”) submits these comments in response to a Public Notice¹ seeking comment on a Supplement² to the Petition for Rulemaking (“EWA/PDV Petition”) filed by the Enterprise Wireless Alliance (“EWA”) and Pacific DataVision, Inc. (“PDV”).³ EWA and PDV propose to reconfigure the 896-901/935-940 MHz Business/Industrial Land Transportation spectrum band (“900 MHz B/ILT”). Their petition calls for the adoption of a Private Enterprise Broadband (“PEBB”) allocation in this band—meaning a single 240-channel, paired 3 MHz license (898-901/937-940 MHz) issued on a Specialized Mobile Radio (“SMR”) Major Trading Area (“MTA”) basis, with the spectrum below 898/937 MHz reserved for site-based and geographic narrowband operations.

¹ Public Notice, FCC, RM-11738, Wireless Telecommunications Bureau Seeks Comment on Supplement to Enterprise Alliance and Pacific DataVision, Inc. Petition for Rulemaking Regarding Realignment of 900 MHz Spectrum, DA 15-579 (rel. May 13, 2015).

² See Letter from Elizabeth Sachs, Counsel to EWA and PDV, to Marlene Dortch, FCC, RM-11738 (May 3, 2015) (“Supplement”).

³ See Enterprise Wireless Alliance and Pacific DataVision, Inc., Petition for Rulemaking, RM-11738 (Dec. 8, 2014) (“EWA/PDV Petition”).

M2M and its parent, Spectrum Networks Group, LLC (“SNG”) expressed their views about the EWA/PDV Petition early on. As they pointed out, while the Petition presented an “interesting concept,” it was at a “starting point,” and did not constitute a “finished proposal.”⁴ As they put it then: “[t]here are issues that still need to be addressed before [the EWA/PDV Petition] can mature into a Notice of Proposed Rulemaking.”⁵ This remains the case. Indeed, many commenters have identified these same questions and have compounded them by citing other colorable concerns.⁶ Despite filing a Supplement, EWA and PDV have failed to resolve, or even address, many of these critical issues, which belong to three principal categories.

First of all, the plan remains half-baked and self-serving. Adoption of the proposal would automatically result in the automatic grant of some 226 million MHz/POPS through three mechanisms: PDV’s existing market-based licenses that do not now extend to 2.5 MHz (or 200 channels) would be expanded to do so; PDV would receive an additional 0.5 MHz of spectrum in the white spaces of these markets where it has site-based licenses through the promotion of these licenses to market-wide status; and PDV would also receive an additional 0.5 MHz of spectrum in the 20 out of 49 markets where it does not have any site-based licenses today. The Commission should not mobilize the machinery of a rulemaking to benefit one entity—PDV itself.

⁴ M2M Spectrum Networks, LLC, and Spectrum Network Group, LLC Comments at 6 (Jan. 12, 2015).

⁵ *Id.*

⁶ *See, e.g.*, National Rural Telecommunications Cooperative Comments at 6-8 (Jan. 12, 2015); Utilities Telecom Council Comments at 1, 7-8 (Jan. 12, 2015) (“UTC Comments”); E. I. du Pont de Nemours and Company Comments at 1 (Jan. 12, 2015) (“DuPont Comments”); Southern Company Services, Inc. at 2 (Jan. 12, 2015). Commenters also raised a number of concerns in their Reply Comments. *See, e.g.*, Southern Company Services, Inc. Reply Comments at 5 (Jan. 27, 2015) ; Utilities Telecom Council Reply Comments at 1-2 (Jan. 27, 2015); Ad Hoc Refiners Group Reply Comments at 5 (Jan. 27, 2015) (“The PDV Petition is an unfortunate example of ‘robbing Peter to pay Paul.’”).

Second, adoption of the EWA proposal would create the risk of scarcity in the spectrum available to B/ILT eligibles. Third, the proposal would impose a lengthy and costly reconfiguration scheme on current licensees.

M2M is filing a Petition for Rulemaking (“M2M Petition”) today with a simple proposal that would increase flexibility and innovation in the 900 MHz B/ILT band by allowing initial for-profit service to third-party, Part 90 eligible businesses.⁷ M2M urges the Commission to embrace the M2M Petition and propose changing its rules accordingly instead of moving forward with the EWA/PDV Petition. The M2M Petition, unlike the EWA/PDV Petition, would serve the public interest by increasing flexibility in the 900 MHz B/ILT band without creating spectrum scarcity for B/ILT eligibles, without requiring a costly reconfiguration, and without favoring only one entity at the expense of others.

II. THE EWA/PDV PETITION STILL RAISES A NUMBER OF UNRESOLVED ISSUES

A. The EWA/PDV Petition Would Result in a Significant Spectrum Grant to PDV

PDV already holds more 900 MHz B/ILT spectrum than any other entity. If the Petition were adopted it would automatically receive much more.

M2M has attached as Exhibit 2 an analysis of the potential effects of the EWA/PDV Petition on the allocation of 900 MHz B/ILT spectrum.⁸ The analysis provides details on PDV’s existing holdings in the band, and the conversions that would be necessary to give effect to the EWA/PDV Petition. It reveals that adoption of PDV’s proposal would translate automatically in an enormous spectrum grant to PDV—all-in-all about 226 million MHz/POPS of additional

⁷ M2M Spectrum Networks, LLC, Petition for Rulemaking, RM-_____ (June 29, 2015) (“M2M Petition”) (Attached as Exhibit 1).

⁸ See M2M Spectrum Networks, LLC, Analysis of Pacific DataVision Spectrum in the 900 MHz B/ILT Band (June 29, 2015) (Attached as Exhibit 2).

spectrum. Specifically, about 143 million of which would come from the extension of its current site-based licenses to market-based licenses, and the other 83 million would come from displacing existing market-based licensees. The proposal would achieve this aggregation through three mechanisms: the expansion of 13 existing PDV market-based licenses to cover 2.5 MHz of the spectrum; the addition of 0.5 MHz through the promotion of PDV's site-based licenses to market-wide status; and the grant of 0.5 MHz in areas where PDV has no site licenses at all.

First of all, in 13 significant markets, PDV's market-based licenses do not span all 2.5 MHz available today for market licenses.⁹ This means that the EWA/PDV Petition would require some 83,847,953 MHz/POPS of B/ILT spectrum to be converted from B/ILT to SMR if the other SMR license holders do not reach separate agreements with PDV.¹⁰

To get to a 3 MHz market-based PEBB license, PDV would still need an additional 0.5 MHz, which it would receive from the conversion of site-based licenses, some of which it now holds. While PDV has more 900 MHz B/ILT spectrum than any other licensee, its 455 B/ILT sites registered in the Commission's database cover only approximately 54% of the United States population.¹¹ Even in the areas where PDV has site-based licenses, its channels are highly concentrated, as demonstrated by the "exploded maps" in Exhibit 2.¹² And PDV has no B/ILT sites in 20 of the 49 MTA Market Areas, meaning that the proposal would result in a massive conversion of B/ILT spectrum that PDV has no claim to today.¹³ Thus, the "white space" to

⁹ *Id.* at 2.

¹⁰ *Id.*

¹¹ *Id.* at 1.

¹² *Id.* at 6-21.

¹³ *Id.* at 1.

which PDV's existing 900 MHz B/ILT licenses do not now extend covers most of the United States geographically.¹⁴ But under the EWA/PDV Petition, PDV would automatically receive this additional 0.5 MHz of currently site-based spectrum on a nationwide basis. That would convert an estimated 142,801,246 MHz/POPS of B/ILT white space spectrum into MTA market-based SMR spectrum for the sole use of PDV.¹⁵

Using the Commission's rulemaking process for such a one-sided proposal is particularly inappropriate when, as is the case here, the goals of its proposal can be achieved without rulemaking. PDV already holds more than 240 channels in most markets.¹⁶ PDV and other licensees can simply engage in spectrum swaps or other voluntary transfers to achieve the consolidation called for in the EWA/PDV Petition, as PDV has already done to amass its extensive holdings in this band.¹⁷

Concerns about this massive giveaway of 900 MHz B/ILT spectrum to PDV were raised in the initial comments and they remain unresolved today.¹⁸

B. Reconfiguration Will Be Complex, Costly, and Unpredictable

The reconfiguration that the EWA/PDV Petition would require is not the easy, straightforward process that the petitioners claim. The experience the Commission has had with the 800 MHz reconfiguration process counsels the utmost caution when the Commission is lightly invited to mandate another involuntary rebanding. As a commenter points out, when the Commission adopted rules for 800 MHz rebanding, it estimated the costs of relocation between

¹⁴ *Id.* at 5.

¹⁵ *Id.*

¹⁶ EWA/PDV Petition at 5.

¹⁷ *See id.* at 17.

¹⁸ *See* UTC Comments at 16; Duke Energy Corp. Comments at 4-5 (Jan. 12, 2015).

\$850 million and \$2.5 billion.¹⁹ The actual costs of 800 MHz rebanding are currently at least \$3.5 billion and they continue to rise.²⁰ And, in contrast with the Nextel rebanding, there is no overarching public safety need for a massive reconfiguration.²¹

Commenters have pointed out that reconfiguration imposes significant and uncertain burdens on licensees, including utilities and critical infrastructure industries in particular. For example, one commenter has pointed to “problems encountered in the 800 MHz conversion” and has raised concerns that it would “be saddled with a certain degree of disruption as [it is] transitioned to new radio systems.”²² Another is worried that its systems will need to be transferred to narrowband spectrum with worse coverage, and that sufficient spectrum may not even exist to fill its needs.²³ EWA and PDV have not adequately addressed these questions.

C. The EWA/PDV Petition Could Create Spectrum Scarcity for B/ILT Eligible Users

The flip side of the spectrum grant to PDV is, of course, a decrease in the spectrum available to other licensees and to Part 90 eligibles. This is particularly true for the existing licensees that would be demoted from market-based licenses to site-based authorizations, as their coverage areas would instantly be lessened. While there are many site-based markets with available channels today, the proposed reduction of the available 900 MHz B/ILT spectrum by 20% (2.5 MHz to 2 MHz) and the forced relocation of existing market-based licensees would

¹⁹ See UTC Comments at 17.

²⁰ See Transition Administrator Quarterly Progress Report for the Quarter Ended September 30, 2014 at <http://www.800ta.org/content/reporting/quarterlyreports.asp>.

²¹ See Southern Company Reply Comments at 6.

²² DuPont Comments at 3.

²³ UTC Comments at 16.

dramatically reduce spectrum availability for businesses. In fact, many markets would likely see their last available channels assigned as a result of the EWA/PDV Petition.

III. THE M2M PETITION PROVIDES A SIMPLER AND BETTER SOLUTION THAN THE EWA/PDV PETITION

The M2M Petition requests a minor change to the Commission's rules to allow an 900 MHz B/ILT band licensee to offer for-profit services to third-party, Part 90 eligible businesses. The rules already permit a 900 MHz B/ILT licensee to provide for-profit service to others following a modification or transfer of its license, but do not on their face permit an applicant to do so from the start.²⁴ Grant of the M2M Petition would result in a rulemaking proceeding proposing to eliminate this artificial restriction while respecting the intended purpose of the 900 MHz B/ILT channels—business use—by requiring that for-profit use be limited to businesses, a limitation not contained in the EWA/PDV Petition. In doing so, the M2M Petition would advance the Commission's motivation in 2004 when it first allowed the 900 MHz B/ILT band to be used to provide service to third parties in certain circumstances, in order to provide businesses with “operational flexibility” to meet their communication needs.²⁵

The minor change requested by the M2M Petition will not present the unresolved issues raised by the EWA/PDV Petition. First of all, the benefits of spectrum flexibility will accrue not just to a single provider, but to any provider that can put the spectrum to use. If the M2M Petition is adopted, new service providers can apply for 900 MHz licenses and immediately begin providing innovative services to businesses desperate for such applications. Second, there

²⁴ 47 C.F.R. § 90.621(f).

²⁵ See Improving Public Safety Communications in the 800 MHz Band, *Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order*, 19 FCC Rcd. 14969, 15127 ¶¶ 335-37 (2004).

is no fear of spectrum scarcity for B/ILT eligibles, as initial third-party use of the spectrum would be permitted only for their benefit. And, finally, no spectrum relocation is required.

IV. CONCLUSION

The EWA/PDV Petition raises a number of unresolved issues that counsel against moving forward with a rulemaking. The Commission should simply consider and implement the simple change to its rules requested today by M2M.

* * *

Respectfully submitted,

/s/

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June 29, 2015

CERTIFICATE OF SERVICE

I hereby certify that on June 29, 2015, I caused true and correct copies of the foregoing to be served by First Class Mail upon the following:

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/s/
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Exhibit 1

M2M Petition for Rulemaking

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Amendment of the Commission's Rules to)	RM- _____
Allow for Specialized Mobile Radio)	
Services Over 900 MHz)	
Business/Industrial Land Transportation)	
Frequencies)	
)	

To: The Commission

**PETITION FOR RULEMAKING OF
M2M SPECTRUM NETWORKS, LLC**

I. INTRODUCTION AND SUMMARY

Pursuant to Section 1.401 of the Commission's Rules,¹ M2M Spectrum Networks, LLC, ("M2M") petitions the Commission to initiate a rulemaking proceeding to allow for licensees for 896-901/935-940 MHz ("900 MHz") Business/Industrial Land Transportation ("B/ILT") Pool channels to provide service to third-party B/ILT eligibles from the start, subject to the requirement of serving only such eligibles rather than the general public.

This rule is necessary to effectuate the flexibility to provide third-party services that the Commission meant to introduce to the band in 2004, but also husband that flexibility to serve the needs of businesses. It would also eliminate what seems to have evolved into a cottage industry of licensees getting away with disregard for the current rule's limitation by making inadequate disclosures or simply by pretending it does not exist. It will thus mitigate prospectively the disparate treatment imposed on those who are candid and forthright with the Commission. In

¹ 47 C.F.R. § 1.401.

addition, by allowing new networks the opportunity to provide services to others, the Commission will encourage innovation and enhance spectral efficiency.

On the other side of the ledger, M2M's proposal will not create channel scarcity for businesses: M2M's proposed draft rule maintains respect for the ends for which the 900 MHz B/ILT channels are meant to be used—business use of the channels for their communication needs. The approach requested here is also superior to that reflected in the Petition for Rulemaking filed by the Enterprise Wireless Alliance and Pacific DataVision, Inc. ("EWA/PDV Petition")² because that latter proposal would not limit use of the "converted" channels to businesses, would require a massive reconfiguration process, and would redound primarily to the benefit of just one licensee.

II. THE COMMISSION'S VISION TO PROVIDE FLEXIBILITY IN THE 900 MHZ BAND CANNOT BE FULLY REALIZED WITHOUT THE REQUESTED RULE CHANGE

In 2004, the Commission decided to increase "operational flexibility" in the 900 B/ILT MHz band.³ The Commission had already liberalized access to the 800 MHz band.⁴ In reviewing that experience, the Commission observed "no speculative runs" on that spectrum, and it found that its existing rules provide the "necessary safeguards" against trafficking in the spectrum.⁵ The Commission concluded that the additional flexibility in the 800 MHz band

² See Enterprise Wireless Alliance and Pacific DataVision, Inc., Petition for Rulemaking, RM-11738 (Dec. 8, 2014) ("EWA/PDV Petition").

³ Improving Public Safety Communications in the 800 MHz Band, *Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order*, 19 FCC Rcd. 14969, 15127 ¶ 335 (2004) ("800 MHz Report and Order").

⁴ Implementation of Sections 309(j) & 337 of the Communications Act of 1934 As Amended, *Report and Order and Further Notice of Proposed Rule Making*, 15 FCC Rcd. 22709, 22760 ¶ 109 (2000) ("Implementation of Sections 309(j) & 337 Report and Order").

⁵ 800 MHz Report and Order, 19 FCC Rcd. at 15127, ¶ 337 & n.770.

allowed businesses to better fulfill their communication needs in that band and adding flexibility in the 900 MHz B/ILT band would have a similar effect.⁶

To effectuate that flexibility for the 900 MHz band, too, the Commission amended its rules so that a 900 MHz B/ILT licensee could provide Specialized Mobile Radio (“SMR”) service upon a modification, transfer, or assignment of the license.⁷ But the Commission, without explanation, did not take the logical next step to give full and consistent effect to this flexibility. It did not change the rule precluding third-party, for-profit use by licensees from the start.⁸ As a result, a licensee may not initially provide SMR services or any for-profit service to others in the 900 MHz B/ILT band. Section 90.617(c) explicitly states that “[SMR] systems will not be authorized on these frequencies.”⁹ And the rules also provide that the “provision of for-profit service to third parties constitutes SMR service.”¹⁰ Absent a waiver, this may not only preclude the use of the spectrum by a new licensee to provide services to the public at large; it may also preclude third-party service to the much narrower circle of Part 90 eligibles themselves—the businesses whose interests Part 90 was meant to ensure.

This dual regime (yes to SMR, even to the public, for modified, transferred, or assigned licenses; no to SMR, even when limited to Part 90 eligibles, for new licenses) has had an odd result. To a large extent, the limit on SMR use of initial licenses has apparently been honored in the breach. Today, many 900 MHz B/ILT licensees appear to provide for-profit service to third parties from the start despite never requesting authority to do so in an assignment or modification

⁶ *Id.* ¶ 335-37.

⁷ 47 C.F.R. § 90.621(f).

⁸ *See* 47 C.F.R. § 90.617(c).

⁹ *Id.*

¹⁰ *See* 47 C.F.R. § 90.7.

application and never requesting a waiver.¹¹ M2M’s parent company, Spectrum Networks Group, LLC (“SNG”), has identified no fewer than 19 licensees who do not appear to use, or intend to use, their B/ILT licenses for private internal communications.¹² These 19 licensees, which may be only the tip of the iceberg, have apparently obtained their licenses either by not being forthright in their application, or by admitting their intent to provide service to others but hoping nobody notices.

In stark contrast, SNG has been penalized for not following either of these paths. SNG has acknowledged the rule and requested its waiver. The result? A denial, and an unacceptably disparate treatment compared to the myriad applicants who did not request a waiver, got away with it, and are now licensees.

Specifically, SNG and M2M are developing a nationwide, licensed, machine-to-machine network that could take advantage of narrowband channels such as those in the 900 MHz B/ILT band to provide services solely to business customers. SNG applied for 900 MHz B/ILT band channels across the country. These licenses would have formed the backbone of M2M’s network and allowed it to begin providing services to a range of business customers. But SNG’s applications were dismissed by the Bureau in an *Order* reasoning that “the contemplated provision of for-profit service to third parties constitutes SMR service, and SNG cannot avoid the effect of Section 90.617(c) by narrowing the scope of customers it intends to serve.”¹³ The

¹¹ See Spectrum Networks Group, LLC, Petition for Orders to Show Cause, at 7-17 (June 26, 2015).

¹² *Id.* at 2.

¹³ Spectrum Networks Group, LLC, Applications and Waiver Request to Allow It to Provide Private, Internal Machine-To-Machine Communications to Businesses on 900 MHz Business/Industrial/Land Transportation Channels, WT Docket No. 14-100, *Order*, DA 15-439, ¶ 5 (rel. Apr. 13, 2015).

Order further rejected SNG’s request for a waiver, finding “that because SNG seeks to blur the demarcation between B/ILT and SMR spectrum, and obtain spectrum that is set aside for traditional B/ILT operations, grant of the waiver request would undermine the purpose of Section 90.617.”¹⁴ SNG and M2M disagree with the Bureau’s *Order* and recently filed an Application for Review asking the Commission to overturn the *Order*.¹⁵ But, in addition to reversing the Bureau, the Commission should also proceed to eliminate a rule that both does not make sense in light of the treatment of modified or transferred licenses, and seems to have led to the submission of incomplete or deceptive applications.¹⁶

III. THE REQUESTED RULE CHANGE WOULD REALIZE THE COMMISSION’S VISION FOR ADDITIONAL FLEXIBILITY AND WILL SERVE THE PUBLIC INTEREST

The proposal will increase flexibility without endangering the availability of spectrum to businesses. This increased flexibility will increase spectral efficiency in at least three ways. First, M2M’s proposal would put fallow spectrum to use, immediately increasing its efficiency. Second, the rules proposed by M2M will ensure that each channel is used to the greatest extent practicable. Instead of issuing a license to each individual business user, a service provider could use the same license to serve the needs of multiple businesses. A single business licensee, on the other hand, would only use its license for its own internal needs and nobody else’s. Third, by using narrowband channels, M2M and other new service providers will be able to serve a

¹⁴ *Id.* ¶ 8.

¹⁵ *See* Spectrum Networks Group, LLC, Application for Review, WT Docket No. 14-100 (May 13, 2015).

¹⁶ Nor should the Commission be deterred by the auction provision of 47 U.S.C. § 309(j). Among other things, that provision does not apply except in cases of mutual exclusivity. In addition, if it were to apply to this proposal, it would apply no less (and perhaps more) to the additional spectrum requested for PDV in the EWA/PDV Petition.

valuable niche not served by providers with wider bandwidth. Not all applications require high bandwidths. Forcing distributed, relatively low bandwidth networks, such as the machine-to-machine communications that M2M will be deploying, to use broadband networks mismatches the user's need and its spectrum. Thus, the M2M Petition will open up a low-cost alternative.

In addition, the M2M Petition best protects the intended use of the band to serve the needs of businesses.¹⁷ These needs include security and alarm monitoring; electric power, water, gas, and waste utilities, including Smart Grid systems; fleet vehicle dispatch; location and route optimization; vending and other machine monitoring systems; gas, oil, and mining operations, including pipelines and tankers; connected car and smart road solutions; and a range of other potential uses. But the modification/transfer exception of Section 90.621(f) has undermined this purpose by allowing full SMR use after a transfer or modification, including CMRS service to individuals.¹⁸ M2M proposes to only allow for-profit use of the 900 MHz B/ILT band to Part 90 eligibles. In other words, the M2M Petition not only would not violate the spirit of the rules—it would actually bring the rules back into line with their original intent. The result is a win-win. The intended purpose of the band—business use—is protected. And the flexibility needed for potential service providers to be able to offer businesses innovative and cost-effective services is expanded.

IV. THE PROPOSED CHANGE BY M2M IS SUPERIOR TO THE EWA/PDV PETITION

The approach proposed by the M2M Petition will also avoid the problems that M2M and others have noted with respect to the EWA/PDV Petition. The M2M Petition will not create scarcity in the 900 MHz B/ILT band; the EWA/PDV Petition will take out of circulation

¹⁷ See 47 C.F.R. § 90.617(c).

¹⁸ See 47 C.F.R. § 90.621(f).

approximately an additional 226 million MHz/POPS of 900 MHz B/ILT spectrum.¹⁹ The M2M Petition does not require a costly and complicated spectrum reconfiguration; the EWA/PDV Petition would require it.²⁰ And any service provider can take advantage of the additional flexibility of M2M's proposed rule change, while only PDV will benefit from the EWA/PDV Petition.

V. CONCLUSION

M2M's proposal would require only a relatively minor change, but it would have large and positive consequences for the public interest. The Commission should therefore initiate a rulemaking proceeding to allow for SMR services provided by all licensees to B/ILT eligibles on 900 MHz B/ILT Pool channels.

* * *

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¹⁹ See M2M Spectrum Networks, LLC, Comments, RM-11738, at 3-4 (June. 29, 2015).

²⁰ See *id.* at 5.

ATTACHMENT

Draft Rules

Paragraph (c) of 47 CFR 90.617 should be amended as follows:

(c) The channels listed in Table 3 are available to applicants eligible in the Industrial/Business Pool of subpart C of this part, ~~but exclude Special Mobilized Radio Systems as defined in § 90.603(e).~~ These frequencies are available in non-border areas. Specialized Mobile Radio (SMR) systems will ~~not~~ only be authorized on these frequencies where the customer is a business that would itself be eligible in the Industrial/Business Pool of subpart C of this part. These channels are available for intercategory sharing as indicated in § 90.621(e).

Exhibit 2

Analysis of Pacific DataVision Spectrum in the 900 MHz B/ILT Band

Analysis of Pacific DataVision Spectrum in the 900 MHz B/ILT Band

Prepared by M2M Spectrum Networks, LLC

- Pacific DataVision has 455 B/ILT sites registered within the FCC's Universal Licensing System ("ULS")
- These sites only cover approximately **54% of the United States population** (including Puerto Rico and the U.S. Virgin Islands)*
 - Under the current Pacific DataVision proposal, this would require the Commission to instantly grant and convert approximately **142,801,246 MHz/POPS of B/ILT white space spectrum** into MTA market-based SMR spectrum for the sole use of Pacific DataVision.
- Number of Channels Per Site Breakdown:
 - 00 – 10 (352 sites)
 - 10 – 20 (57 sites)
 - 21 – 40 (28 sites)
 - 41 – 50 (04 sites)
 - 51 – 70 (06 sites)
 - 71 – 100 (05 sites)
 - 101 – 115 (03 sites)
- In addition to the whites pace, Pacific DataVision has 437 sites with less than 40 channels that would result in additional MHz/POPS of occupied space to be added to the equation.
 - For example MTA006 – Charlotte
 - Pacific DataVision has 4 B/ILT channels that cover a population of 2,726,623.
 - Pacific DataVision would require 36 B/ILT channels that cover this contour, resulting in an additional **2,453,960 MHz/POPS converted from B/ILT Spectrum into SMR Spectrum.**
- Pacific DataVision has **no B/ILT sites in 20 of the 49 MTA Market Areas.**

*Population Coverage is calculated by the contour coverage over county population.

Pacific DataVision Spectrum in the 900 MHz B/ILT Band Continued

Pacific DataVision lacks the entire 200 SMR MTA based licenses in the following Markets which would require an additional **83,847,953 MHz/POPs of B/ILT Spectrum** to be converted from B/ILT to SMR if the other SMR license holders do not agree to work with Pacific DataVision

MTA	MTA Name	MTA Channels	Population	Additional Conversion under minimum 140 Ch Ask
MTA008	Boston-Providence	110	10,346,210	15,519,315
MTA032	Des Moines-Quad Cities	110	3,274,064	4,911,096
MTA015	Miami-Fort Lauderdale	130	7,392,132	11,088,198
MTA036	Salt Lake City	140	4,088,575	6,132,863
MTA040	Little Rock	140	2,653,287	3,979,931
MTA045	Omaha	140	1,911,890	2,867,835
MTA002	Los Angeles-San Diego	160	24,900,085	24,900,085
MTA025	Puerto Rico-U.S. Virgin Islands	170	3,832,056	2,874,042
MTA026	Louisville-Lexington-Evansville	170	4,202,482	3,151,862
MTA022	Denver	180	5,698,793	2,849,397
MTA027	Phoenix	180	6,120,313	3,060,157
MTA035	Buffalo-Rochester	180	2,756,586	1,378,293
MTA033	San Antonio	190	4,539,526	1,134,882

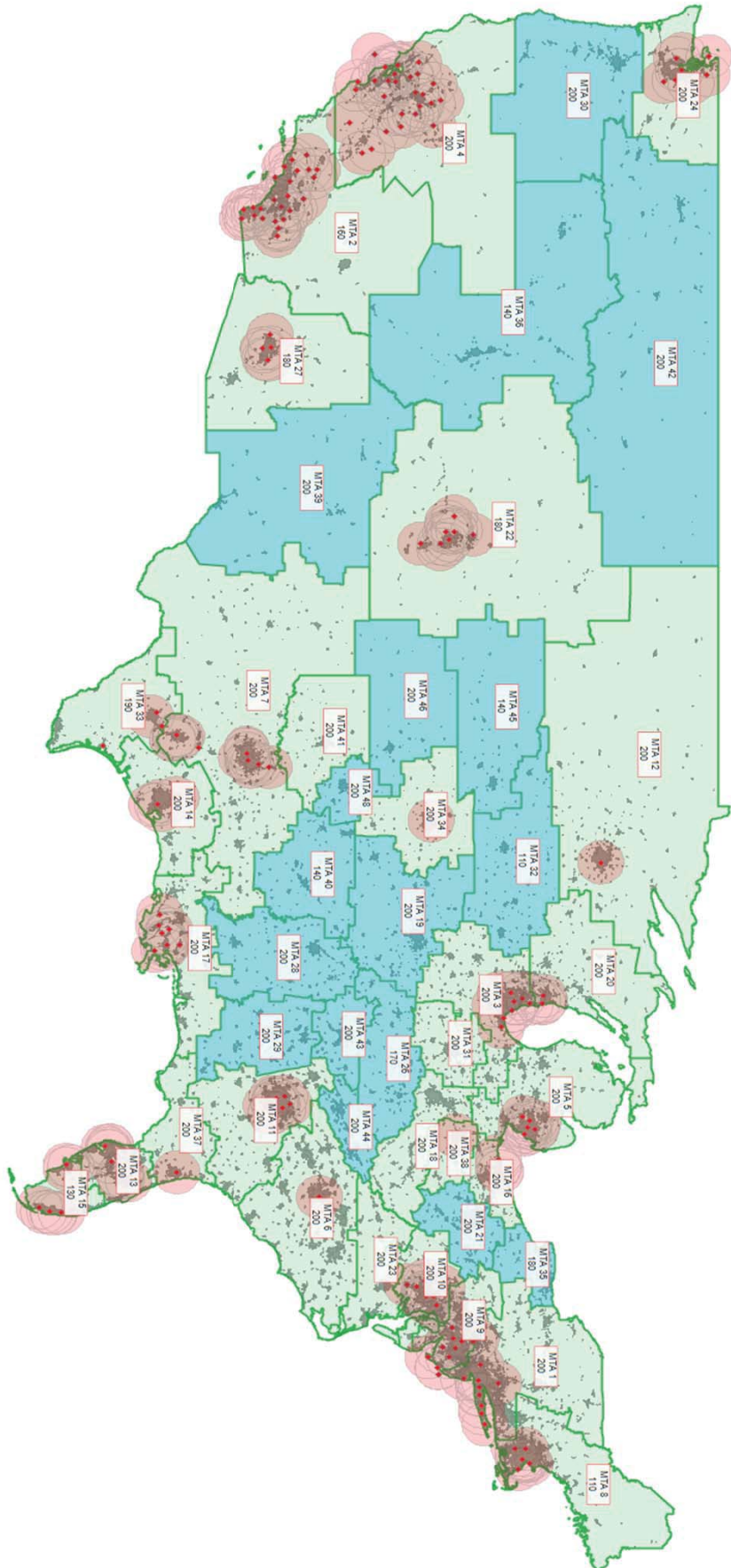
Coverage Breakdown

MTA		Population	B/ILT Coverage	B/ILT White Space	Additional Conversion under minimum 140 Ch Ask	Example Additional Area No Channels	Example Additional Area No Channels
MTA	MTA Channels	MTA Name					
MTA001	200	New York	29,211,230	22,040,641	7,170,589	-	
MTA002	160	Los Angeles-San Diego	24,900,085	21,169,311	3,730,775	24,900,085	
MTA003	200	Chicago	13,983,491	10,303,414	3,680,077	-	
MTA004	200	San Francisco-Oakland-San Jose	15,234,892	13,798,394	1,436,498	-	
MTA005	200	Detroit	10,599,390	6,539,505	4,059,885	-	
MTA006	200	Charlotte-Greensboro-Greenville-Raleigh	13,629,322	2,726,623	10,902,699	-	36
MTA007	200	Dallas-Fort Worth	13,788,681	8,840,184	4,948,497	-	
MTA008	110	Boston-Providence	10,346,210	7,601,970	2,744,240	15,519,315	
MTA009	200	Philadelphia	10,136,216	8,946,619	1,189,597	-	
MTA010	200	Washington-Baltimore	10,031,764	9,040,752	991,012	-	
MTA011	200	Atlanta	10,297,280	6,293,588	4,003,692	-	
MTA012	200	Minneapolis-St. Paul	7,114,536	3,256,337	3,858,199	-	33
MTA013	200	Tampa-St. Petersburg-Orlando	8,083,028	7,613,604	469,424	-	5,869,492
MTA014	200	Houston	7,634,346	6,202,204	1,432,142	-	
MTA015	130	Miami-Fort Lauderdale	7,392,132	6,893,124	499,008	11,088,198	
MTA016	200	Cleveland	4,973,776	3,528,382	1,445,394	-	
MTA017	200	New Orleans-Baton Rouge	5,589,931	2,324,049	3,265,882	-	
MTA018	200	Cincinnati-Dayton	4,984,370	159,930	4,824,440	-	
MTA019	200	St. Louis	5,311,340	-	5,311,340	-	
MTA020	200	Milwaukee	5,200,059	2,141,263	3,058,796	-	
MTA021	200	Pittsburgh	3,960,152	-	3,960,152	-	
MTA022	180	Denver	5,698,793	4,089,302	1,609,491	2,849,397	
MTA023	200	Richmond-Norfolk	5,089,138	569,173	4,519,965	-	
MTA024	200	Seattle (Excluding Alaska)	5,211,939	4,550,335	661,604	-	
MTA025	170	Puerto Rico-U.S. Virgin Islands	3,832,056	-	3,832,056	2,874,042	

Coverage Breakdown Continued

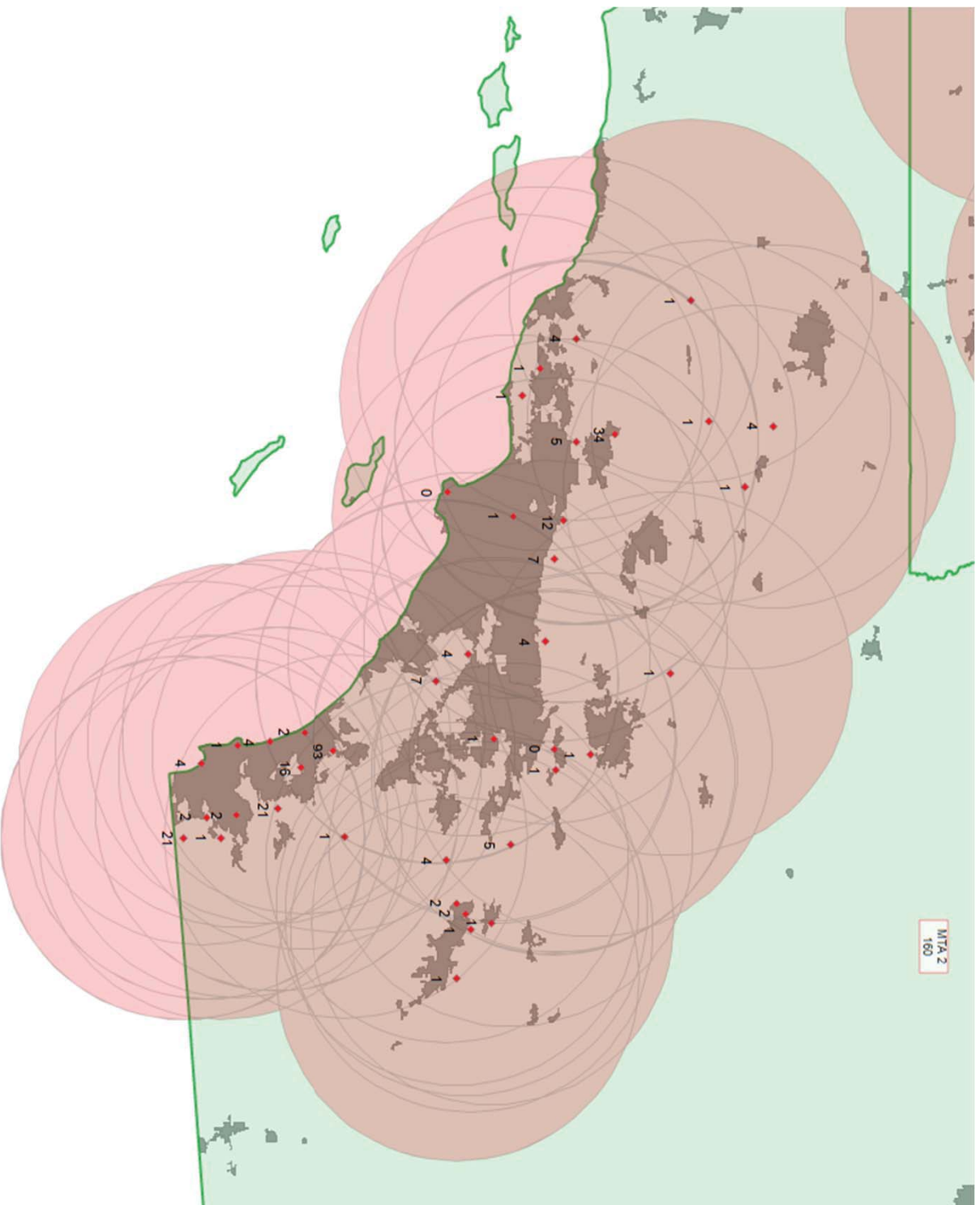
MTA	MTA Channels	MTA Name	Population	B/ILT Coverage	B/ILT White Space	Additional Conversion under minimum 140 Ch Ask	Example Additional Area No Channels	Example Additional Area No Channels
MTA026	170	Louisville-Lexington-Evansville	4,202,482	-	4,202,482	3,151,862		
MTA027	180	Phoenix	6,120,313	4,046,888	2,073,425	3,060,157		
MTA028	200	Memphis-Jackson	3,874,461	-	3,874,461	-		
MTA029	200	Birmingham	3,819,780	-	3,819,780	-		
MTA030	200	Portland	4,234,759	-	4,234,759	-		
MTA031	200	Indianapolis	3,595,860	27,052	3,568,808	-		
MTA032	110	Des Moines-Quad Cities	3,274,064	-	3,274,064	4,911,096		
MTA033	190	San Antonio	4,539,526	2,479,395	2,060,131	1,134,882		
MTA034	200	Kansas City	3,465,521	1,804,310	1,661,211	-	36	3,118,969
MTA035	180	Buffalo-Rochester	2,756,586	-	2,756,586	1,378,293		
MTA036	140	Salt Lake City	4,088,575	-	4,088,575	6,132,863		
MTA037	200	Jacksonville	3,185,860	1,531,587	1,654,273	-	33	2,628,335
MTA038	200	Columbus	2,636,378	2,090,902	545,476	-	36	2,372,740
MTA039	200	El Paso-Albuquerque	2,895,119	-	2,895,119	-		
MTA040	140	Little Rock	2,653,287	-	2,653,287	3,979,931		
MTA041	200	Oklahoma City	2,225,187	38,862	2,186,325	-		
MTA042	200	Spokane-Billings	2,447,310	-	2,447,310	-		
MTA043	200	Nashville	2,540,271	-	2,540,271	-		
MTA044	200	Knoxville	2,116,999	-	2,116,999	-		
MTA045	140	Omaha	1,911,890	-	1,911,890	2,867,835		
MTA046	200	Wichita	1,241,033	-	1,241,033	-		
MTA047	200	Honolulu	1,360,301	-	1,360,301	-		
MTA048	200	Tulsa	1,318,995	-	1,318,995	-		
MTA049	200	Alaska	710,231	-	710,231	-		
		Totals	313,448,945	170,647,699	142,801,246	83,847,953	In MHz/Pops	

B/ILT Site Coverage * With Total MTA SMR Channels

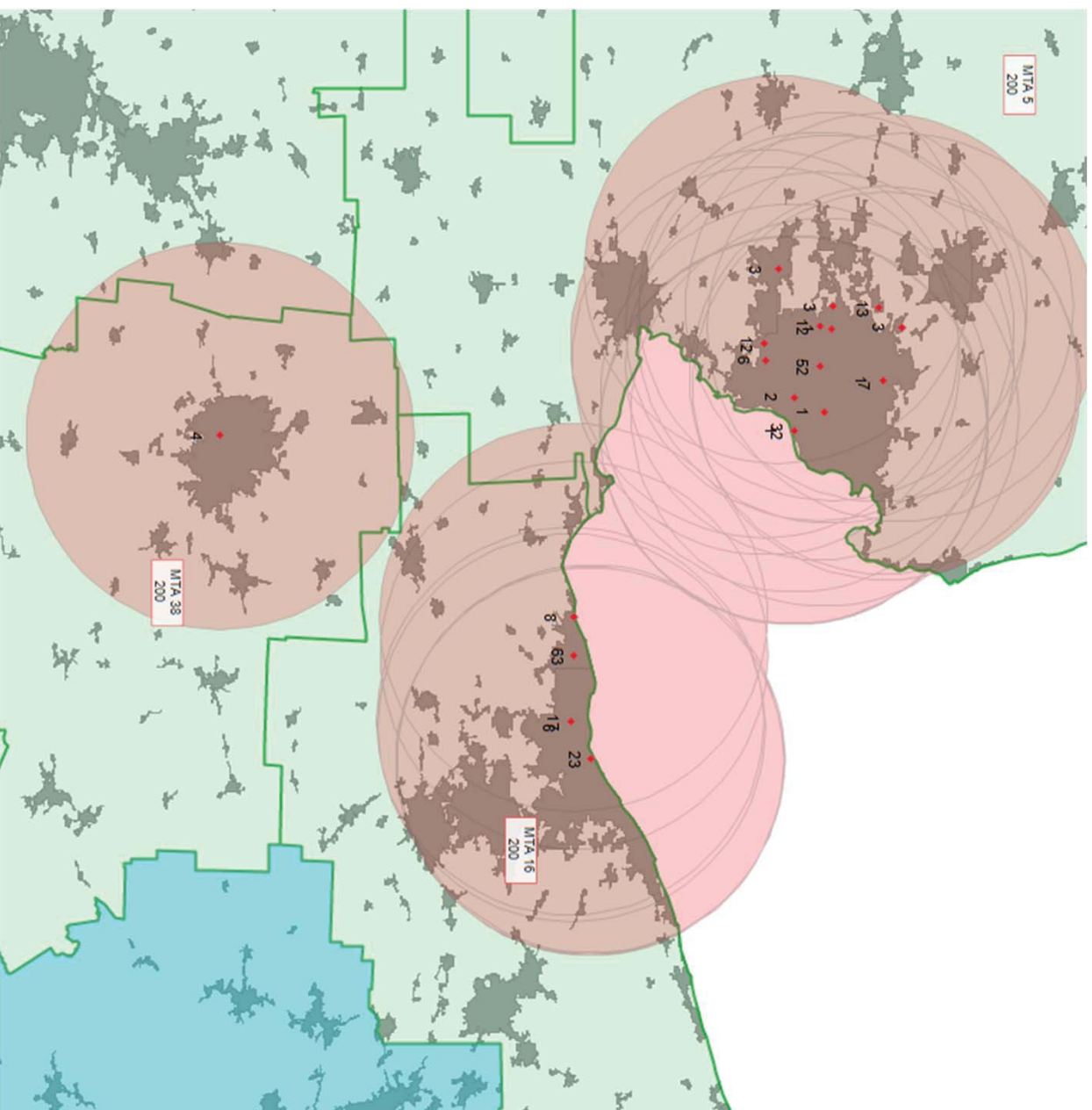


* 55 Mile Contour Shown

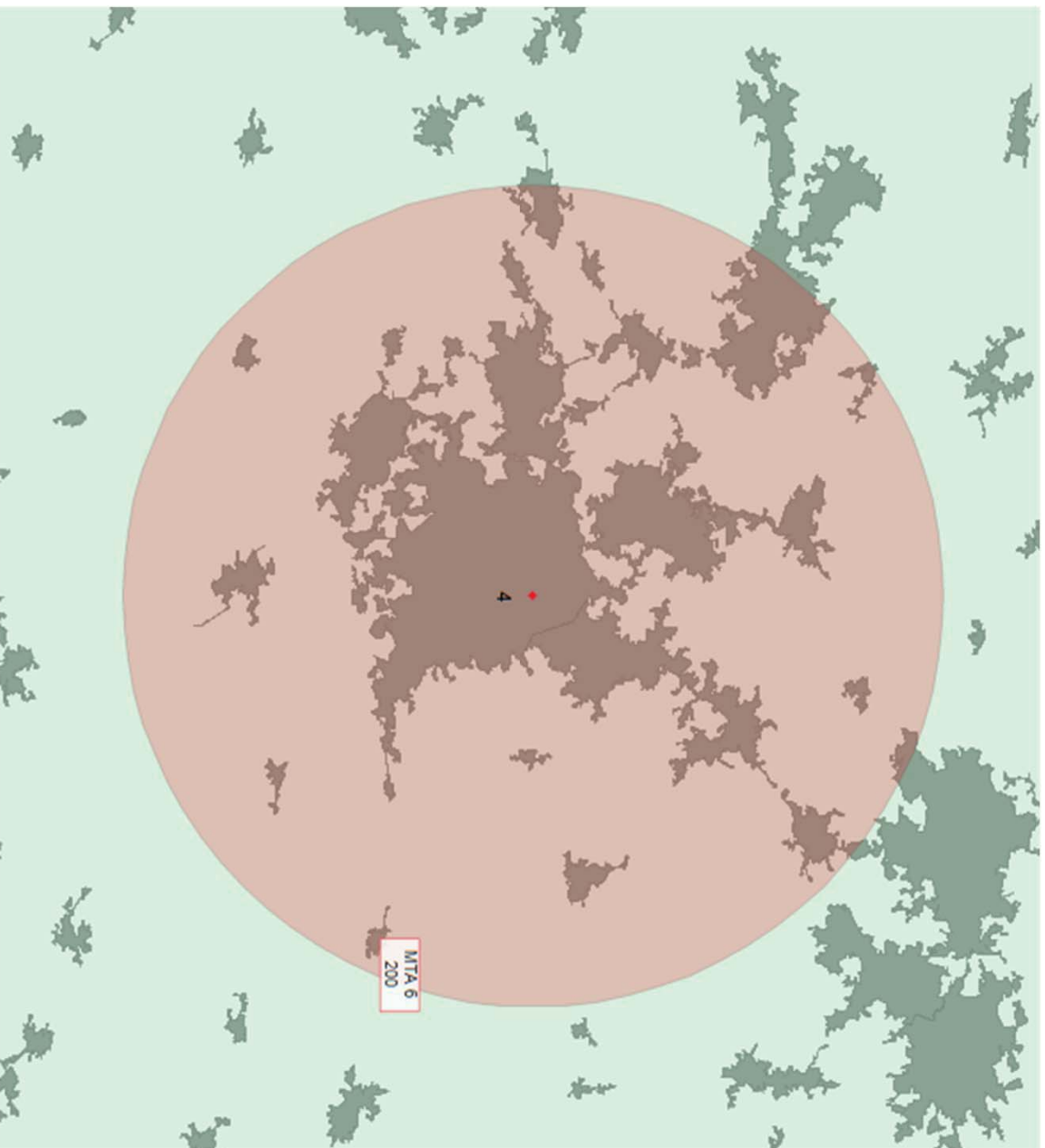
Exploded View Southern California



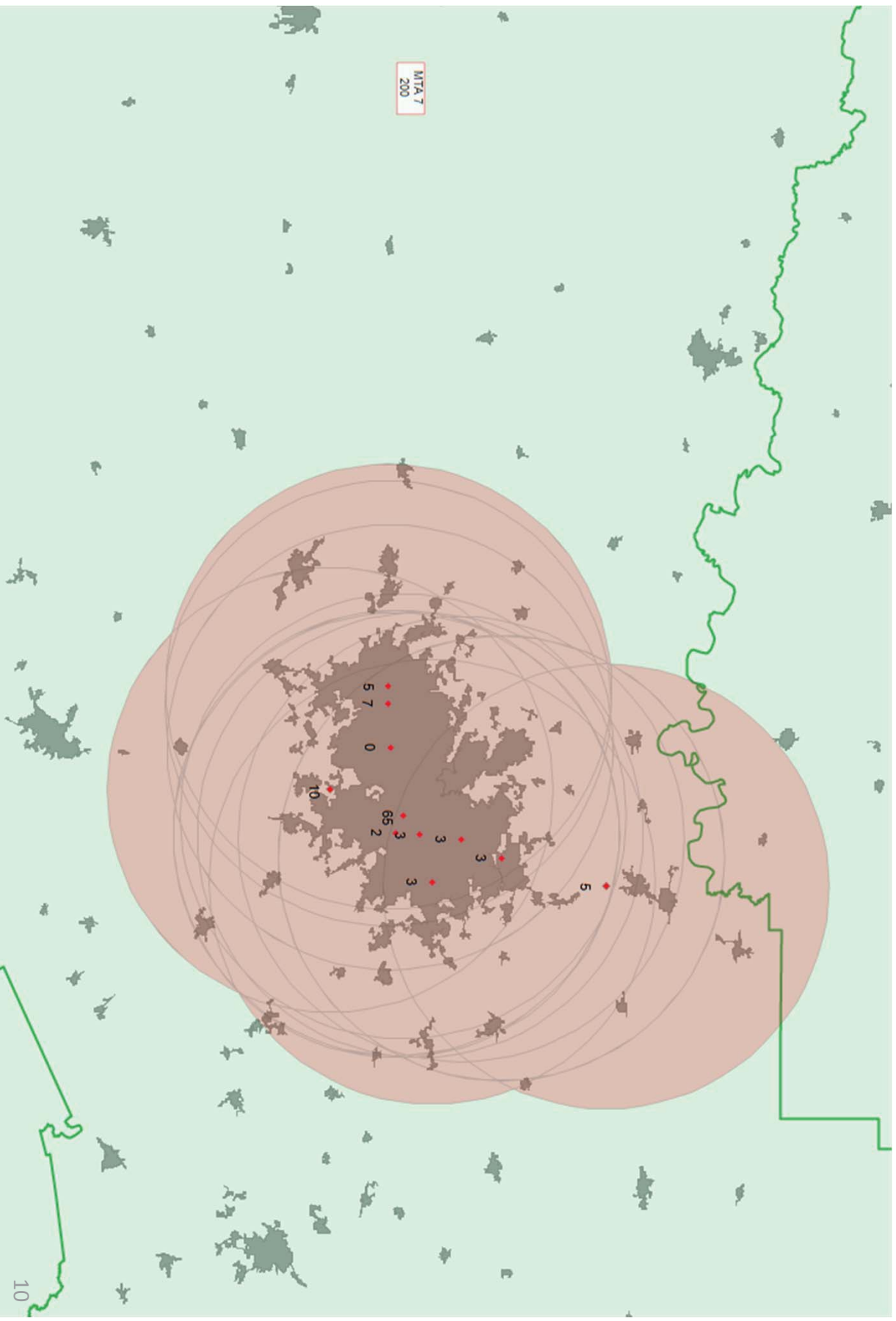
Exploded View Eastern Michigan



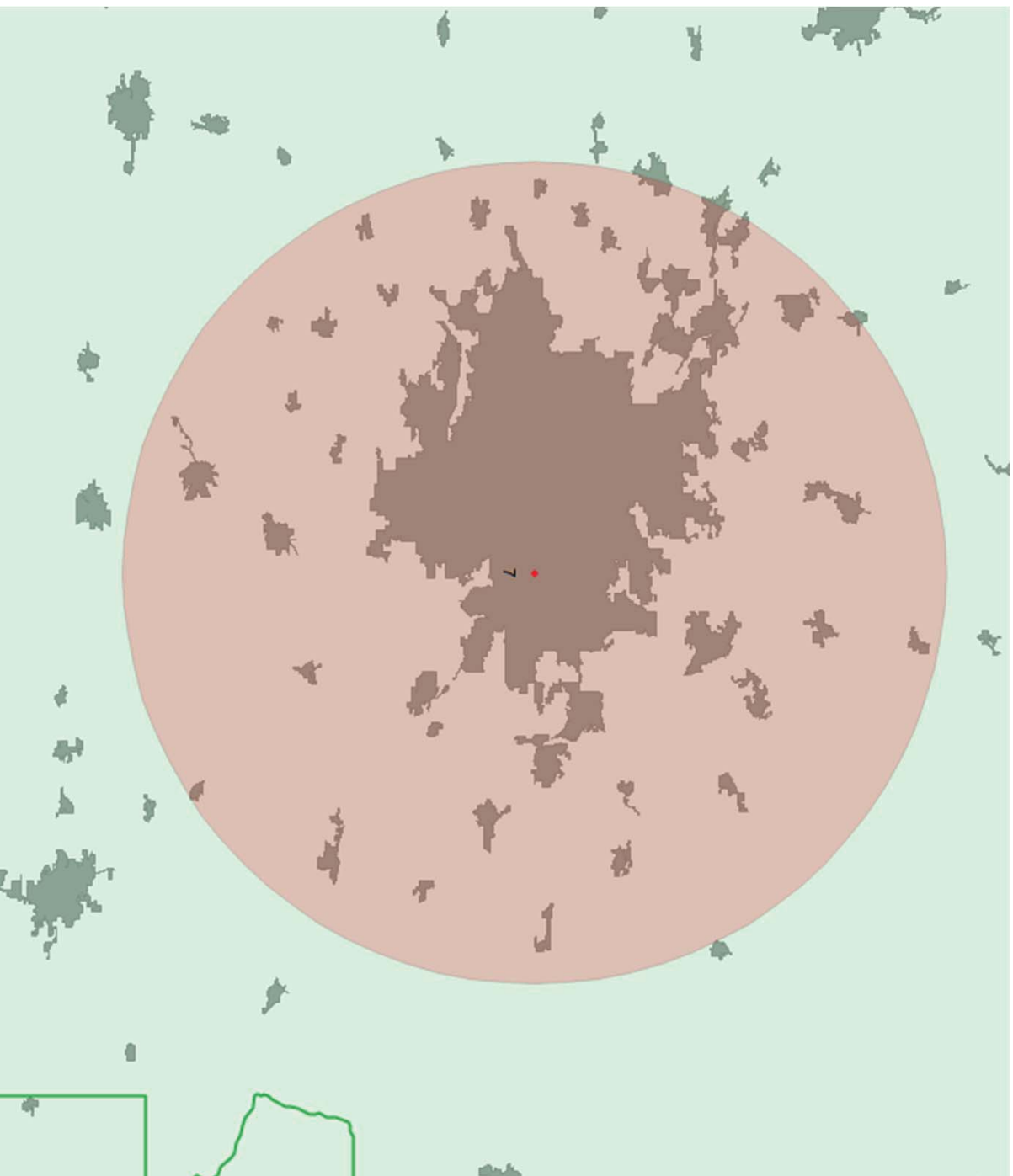
Exploded View Carolinas



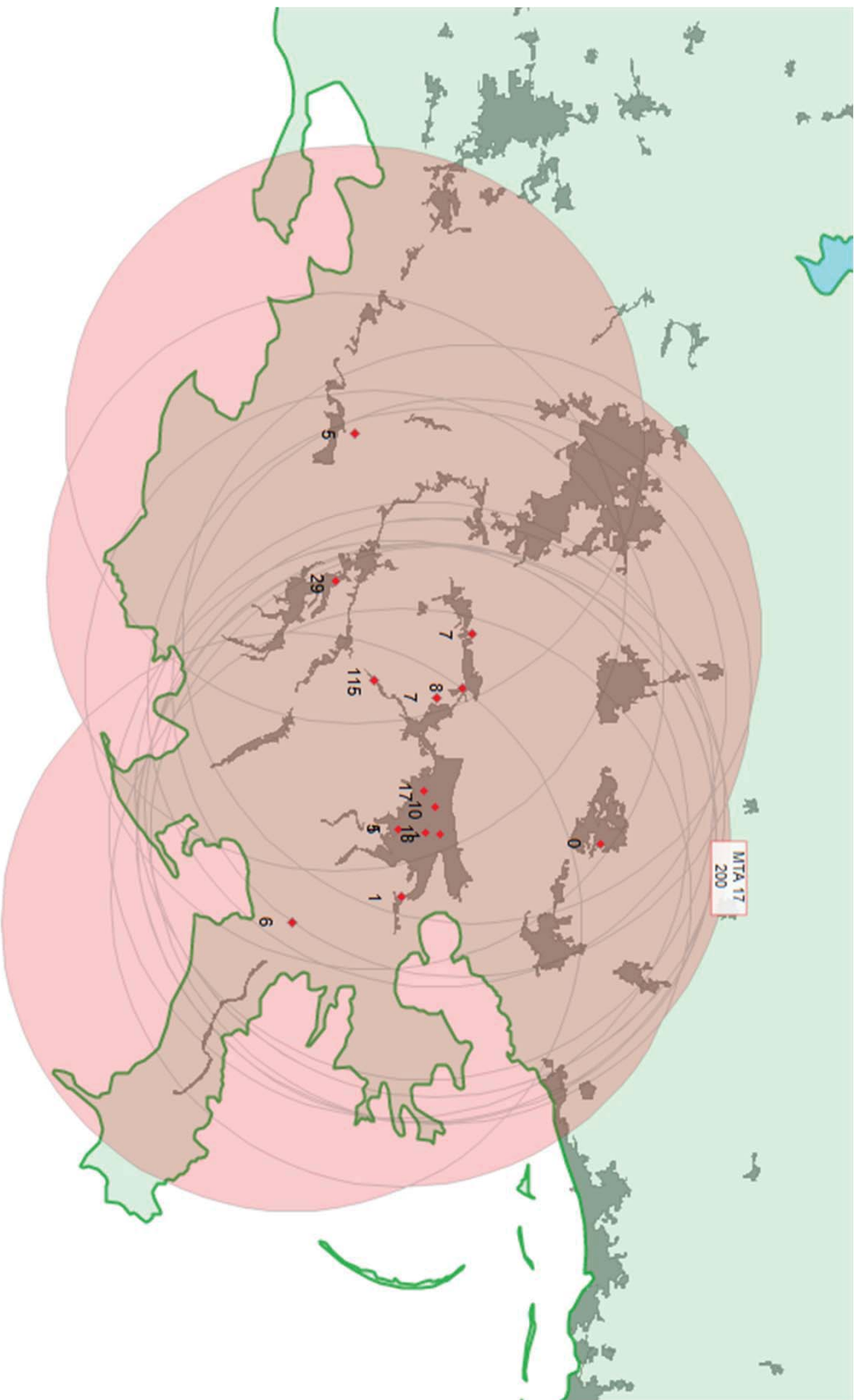
Exploded View Dallas Metro



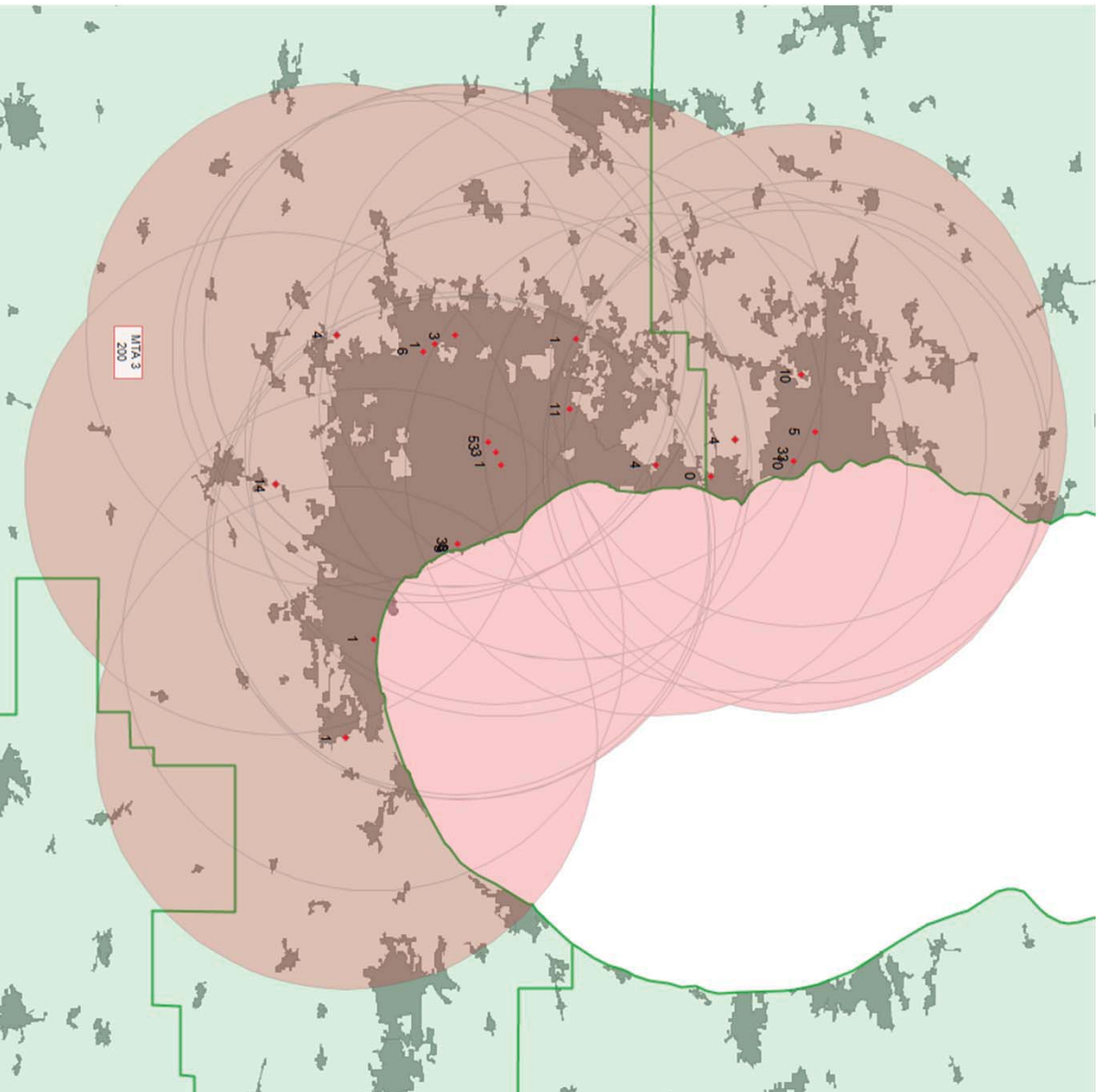
Exploded View Minnesota



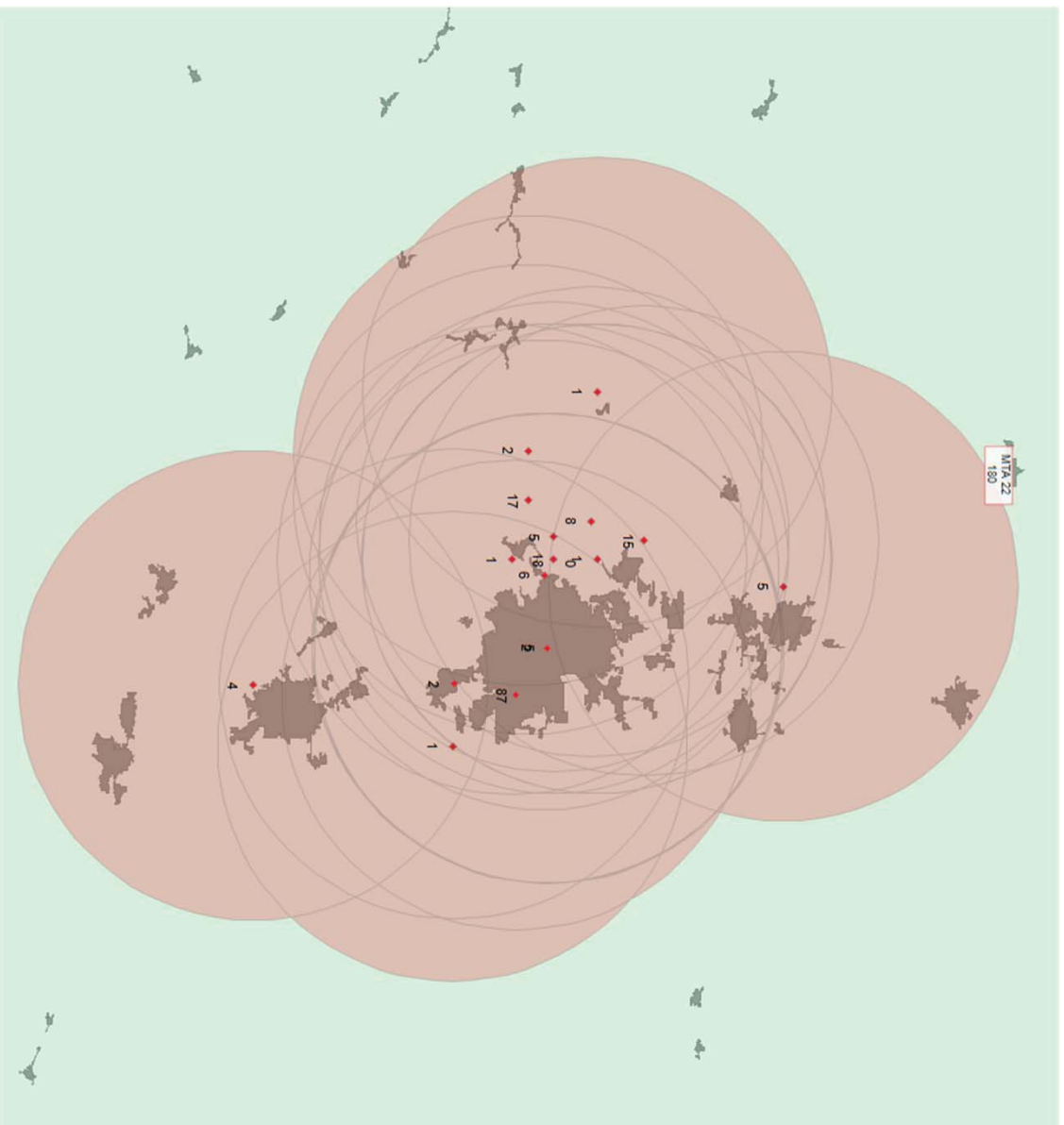
Exploded View Louisiana



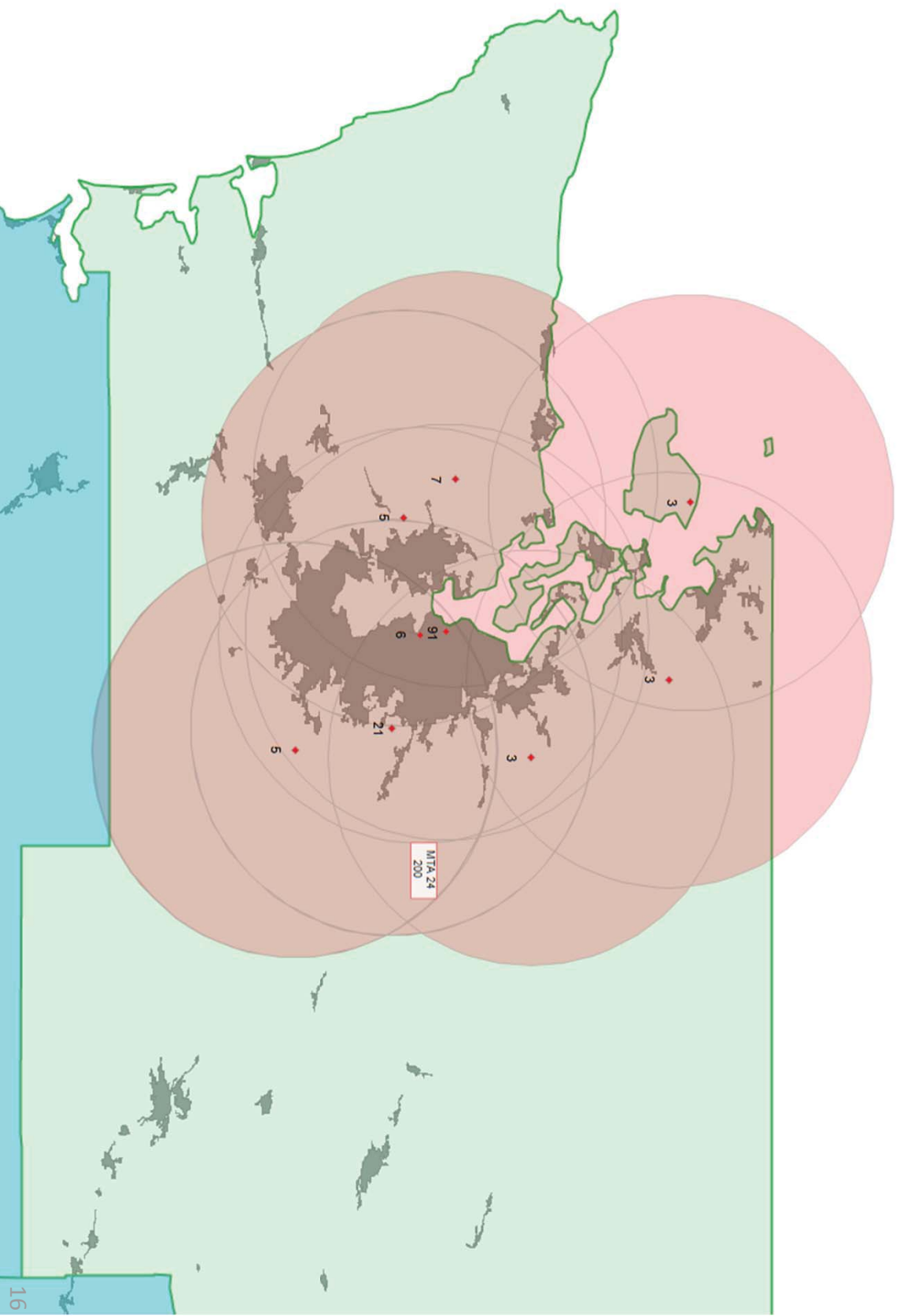
Exploded View Chicago



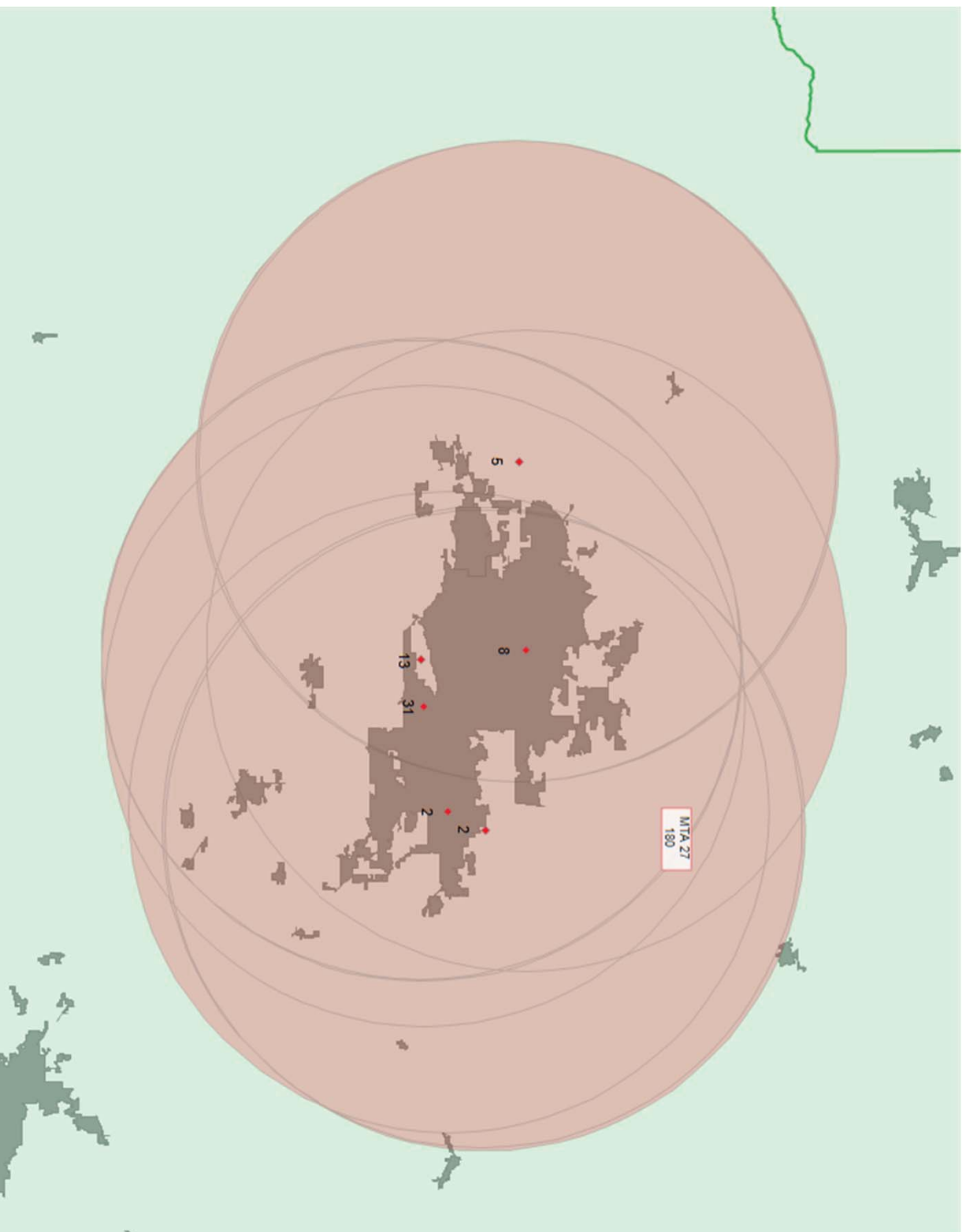
Exploded View Colorado



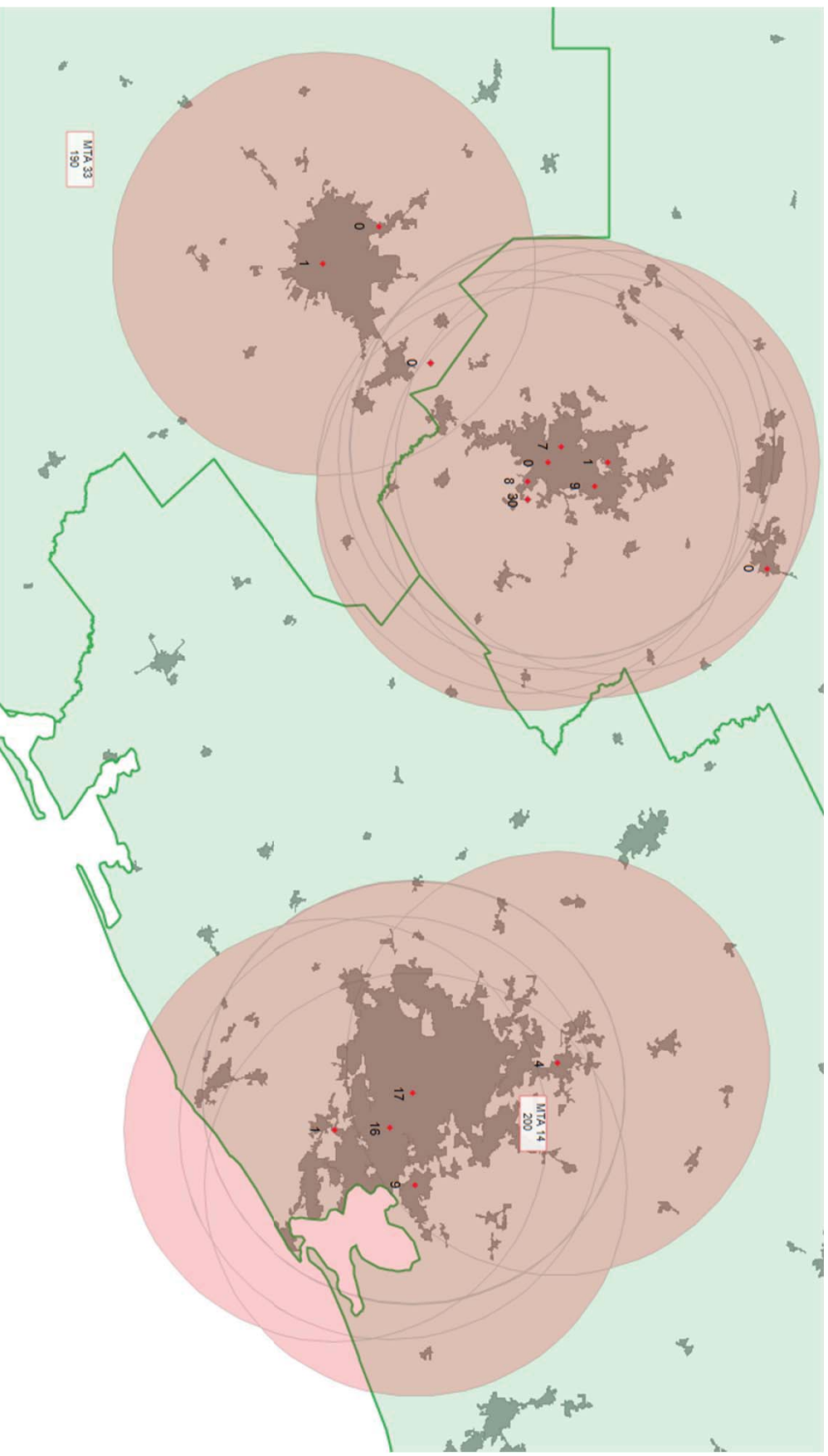
Exploded View Washington



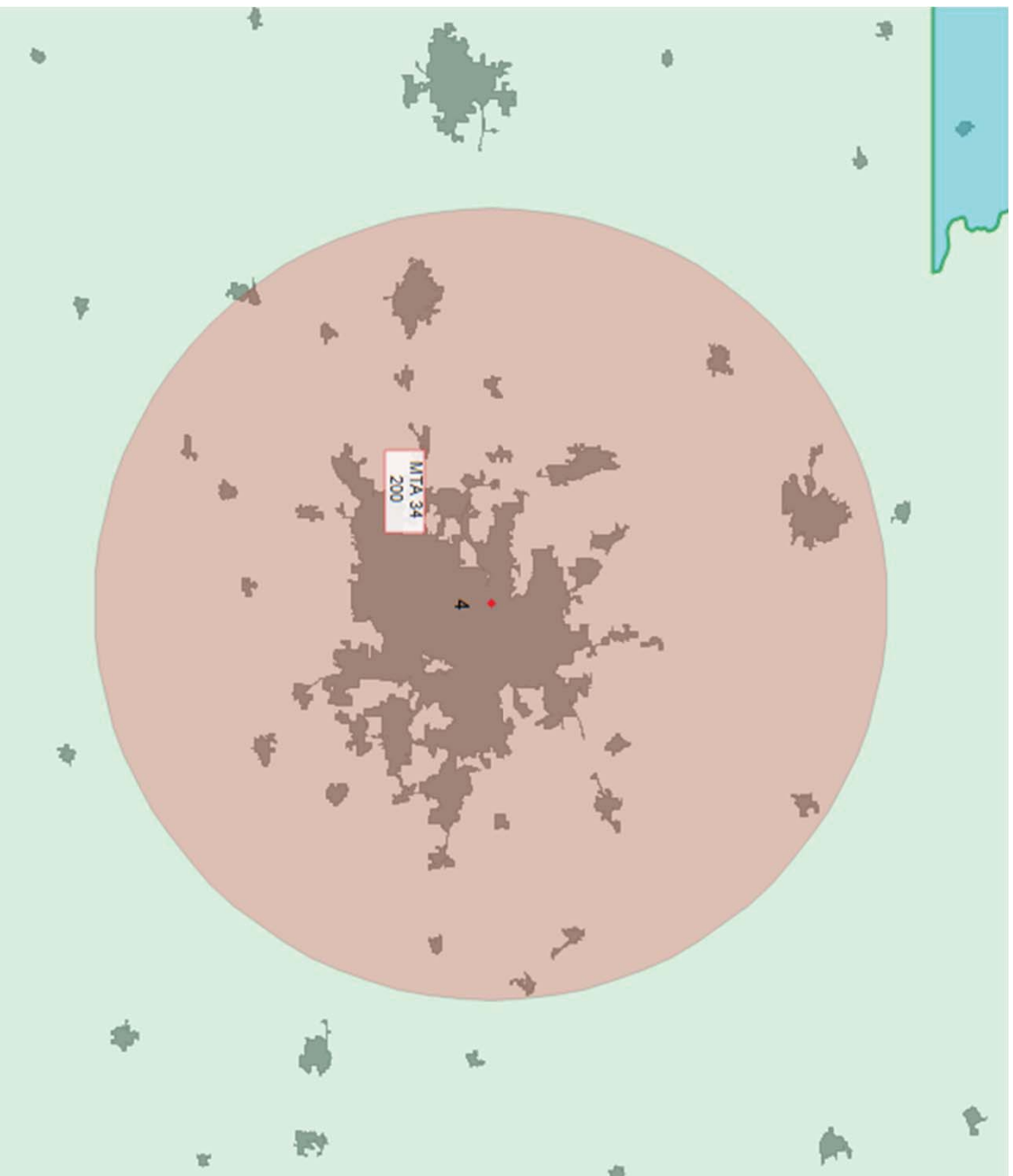
Exploded View Phoenix Metro



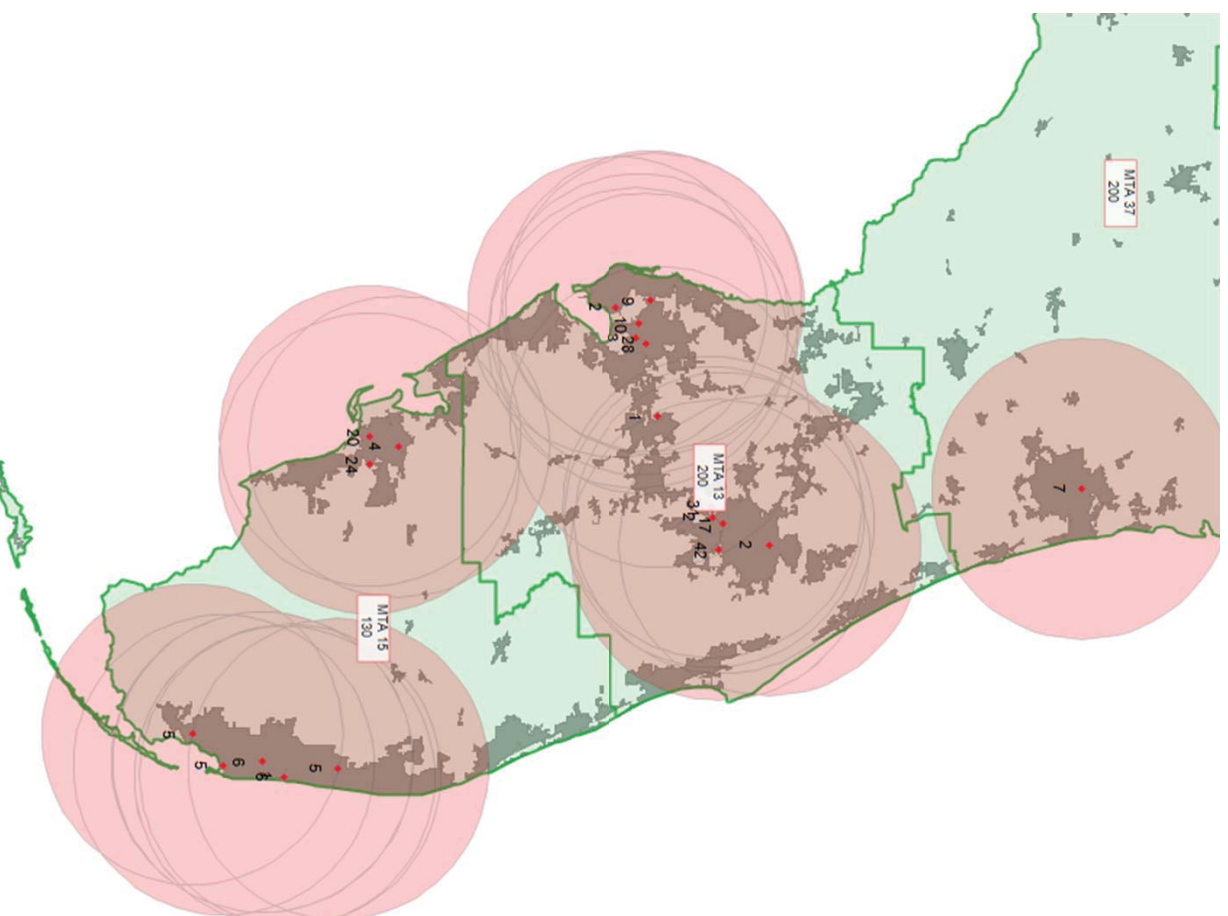
Exploded View Southeast Texas



Exploded View Kansas/Missouri



Exploded View Florida



Exploded View Northeast

